What is claimed is:

1. An OFDM communication apparatus comprising:

a transmitter having adder for adding a symbol used for synchronization pull-in to a valid symbol and inserter for inserting a correlation value suppression signal immediately after the symbol; and

a receiver having correlation value calculator for calculating a correlation value using a reception signal and symbol synchronizer for establishing symbol synchronization by carrying out threshold judgment on the calculated correlation value.

2. The OFDM communication apparatus according to claim 1, wherein said adder uses a synchronization symbol and phase reference symbol which is identical to the synchronization symbol as the symbol used for synchronization pull-in, and the correlation value calculator comprises delayer for delaying the reception signal by a unit symbol and multiplies the reception signal and the reception signal delayed by the unit symbol.

3. The OFDM communication apparatus according to claim 1, wherein said adder uses a synchronization symbol and phase reference symbol which is identical to the synchronization symbol as the symbol used for synchronization pull-in, and the correlation value calculator comprises IFFT-processor for IFFT-processing the phase reference symbol and multiplies the reception

signal and the IFFT-processed phase reference symbol.

4. The OFDM communication apparatus according to claim 3, wherein the correlation value calculator further comprises hard decider for carrying out hard decision on the IFFT-processed phase reference symbol and multiplies the reception signal and the phase reference symbol subjected to IFFT-processing and hard decision.

5. The OFDM communication apparatus according to claim 1, wherein the transmitter uses a synchronization symbol as the symbol used for synchronization pull-in and the correlation value calculator comprises IFFT-processor for IFFT-processing the synchronization symbol and multiples the reception signal and the IFFT-processed synchronization symbol.

6. The OFDM communication apparatus according to claim 1, wherein the transmitter uses a synchronization symbol with a same waveform repeated at every 1/n cycle as the symbol used for synchronization pull-in, the correlation value calculator comprises delayer for delaying the reception signal by 1/n unit symbol and multiplies the reception signal and the reception signal delayed by 1/n unit symbol.

7. The OFDM communication apparatus according to claim 2 ~~or claim 3~~, wherein the interval of the correlation value suppression signal is shorter than the cycle of the phase reference symbol.

8. The OFDM communication apparatus according to

claim 5 ~~or claim 6~~, wherein the interval of the correlation value suppression signal is shorter than the cycle of the synchronization symbol.

9. The OFDM communication apparatus according to claim 1, wherein the receiver comprises detector for detecting the level of the reception signal and the symbol synchronizer establishes symbol synchronization based on the information of the level and the result of threshold judgment.

10. The OFDM communication apparatus according to claim 1, wherein the transmitter further comprises interval changer for adaptively changing the interval of the correlation value suppression signal according to a communication environment.

11. The OFDM communication apparatus according to claim 1, wherein the transmitter further comprises level changer for changing the level of the correlation value suppression signal according to a communication environment.

12. The OFDM communication apparatus according to claim 11, wherein the transmitter increases the level of the correlation value suppression signal based on an average value of quality information of the reception signal.

13. The OFDM communication apparatus according to claim 1, wherein the correlation value suppression signal is selected from among groups of null symbols, null signals, inverted symbols with the polarity of the

symbol used for the synchronization pull-in inverted and inverted signals with the polarity of the symbol used for the synchronization pull-in inverted.

14. A base station apparatus comprising an OFDM communication apparatus, said OFDM communication apparatus comprising:

a transmitter having adder for adding a symbol used for synchronization pull-in to a valid symbol and inserter for inserting a correlation value suppression signal immediately after the symbol; and

a receiver having correlation value calculator for calculating a correlation value using a reception signal and symbol synchronizer for establishing symbol synchronization by carrying out threshold judgment on the calculated correlation value.

15. A communication terminal apparatus comprising an OFDM communication apparatus, said OFDM communication apparatus comprising:

a transmitter having adder for adding a symbol used for synchronization pull-in to a valid symbol and inserter for inserting a correlation value suppression signal immediately after the symbol; and

a receiver having correlation value calculator for calculating a correlation value using a reception signal and symbol synchronizer for establishing symbol synchronization by carrying out threshold judgment on the calculated correlation value.

16. An OFDM communication method comprising:

the transmitting step having the steps of adding a symbol used for synchronization pull-in to a valid symbol and inserting a correlation value suppression signal immediately after the symbol; and

the receiving step having the steps of calculating a correlation value using a reception signal and establishing symbol synchronization by carrying out threshold judgment on the calculated correlation value.

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